

2nd JOINT MEETING OF THE U. S. SECTIONS OF THE COMBUSTION INSTITUTE

26 March, 2001

8:15

**Plenary Session I
Jewett Ball Room**

Introduction and Welcome:

Jay O. Keller
Sandia National Laboratories and Chair, Western States Section

Mark D. Levine
Director, Environmental Energy Technologies Division
LBNL

Meeting Arrangements:

Robert K. Cheng
LBNL

The Future Of Combustion in US Transportation

Session Chair: *Donald Lucas*
LBNL

Invited Talk 1
Reducing Combustion Emissions from Vehicles: The California Clean Air Plan
Alan C. Lloyd
California Air Resources Board

Invited Talk 2
Future Energy Conversion Technologies for Heavy Vehicles - Prospects and Promise
James J. Eberhardt
U.S. DOE Office Of Heavy Vehicle Technologies

Invited Talk 3
The Second Century Of Combustion Engines—The Big Problems And Possible Solutions
Robert F. Sawyer
University of California, Berkeley

10:30 - Break

	Jewett – A IC ENGINES I D. Reuss, GM	Jewett – B REACTION KINETICS I V. Knyazev, Catholic U.	Jewett – C FUNDAMENTAL COMBUSTION STUDIES I I. Puri, U. Cincinnati	D - 208 SPRAYS & DROPLETS I L. Chen, U. Iowa	E - 210 SOLID /SYNTHESIS I C. Fernandez-Pello, UC Berkeley
11:00	4 Continued Need For Combustion Research In Transportation Engines <i>Brown, W. L.</i>	17 Optical And Mass Spectrometer Studies Of Dimethyl Ether/O ₂ /Ar Flames <i>McIlroy, A.</i> <i>Steeves, A.</i> <i>Thoman, J. Jr.</i>	30 Analysis Of OH* Chemiluminescence Measurements And Its Modeling Of Premixed Methane Flames <i>Haber, L.</i> <i>Vandsburger, U.</i>	43 Transient Measurements Of The Composition Of Evaporating Droplets By Absorption Spectroscopy <i>Xiao, J. S.</i> <i>Wei, J. B.</i> <i>Shaw, B. D.</i>	56 Boundary-Layer Diffusion Flame Over A Porous Plate <i>Ananth, R.</i> <i>Ndubizu, C. C.</i> <i>Tatem, P.A.</i> <i>Patnaik, G.</i> <i>Kailasanth, K.</i>
11:20	5 The Effect Of Inhomogeneities On Ignition Under HCCI- Engine Conditions <i>Hewson, J. C.</i> <i>Kerstein, A. R.</i> <i>Chen, J. H.</i> <i>Dec, J. E.</i>	18 Comparison Of The Effect Of CO ₂ Or NH ₃ On The Hydrocarbon Intermediates Formation In Slightly Rich Ethylene Flames <i>Vandooren, J.</i> <i>Renard, C.</i> <i>Musick, M.</i> <i>Van Tiggelen, P. J.</i>	31 Unsteady Behavior Of Naturally Oscillating And Externally Forced Buoyant Diffusion Flames <i>Cowart, J. S.</i> <i>Cetegen, B. M.</i>	44 Detailed Modeling Of Ethanol Droplet Combustion Under Microgravity Condition <i>Kazakov, S.</i> <i>Conley, J.</i> <i>Dryer, F. L.</i>	57 TGA/MS Studies Of Thermal And Oxidative Degradation Of Poly (methylmethacrylate) <i>Dakka, S. M.</i> <i>Jackson, G. S.</i> <i>Torero, J. F.</i>
11:40	6 1.9-Liter Four-Cylinder HCCI Engine Operation With Exhaust Gas Recirculation <i>Au, M. Y.</i> <i>Girard, J. W.</i> <i>Dibble, R.</i> <i>Flowers, D.</i> <i>Aceves, S.</i> <i>Martinez-Frias, J.</i> <i>Smith, R.</i> <i>Seibel, C.</i> <i>Maas, U.</i>	19 The Influence Of Water- Mist And Thermal- Radiation Interactions On The Structure And Extinction Of Premixed Methane-Air Flames <i>Yang, W.</i> <i>Parker, T.</i> <i>Kee, R. J.</i> <i>McKinnon, T.</i> <i>Abbud-Madrid, A.</i>	32 Dynamic Analysis Of Burner Stabilized Flames Part II: Effects Of Fuel Composition <i>Khanna, V. K.</i> <i>Vandsburger, U.</i> <i>Saunders, W. R.</i> <i>Baumann, W. T.</i>	45 An Algorithm To Determine Mass Transfer Rate From A Liquid Surface Using VOF Model <i>Banerjee, R.</i> <i>Isaac, K. M.</i>	58 Experimental Investigation Of A Forced Flow Boundary Layer Flame Over PMMA <i>Ndubizu, C. C.</i> <i>Ananth, R.</i> <i>Tatem, P.A.</i>

2nd JOINT MEETING OF THE U. S. SECTIONS OF THE COMBUSTION INSTITUTE

12:00 – Business Meeting of the U. S. Sections: Eastern (Jewett A), Central (Jewett B), Western (Jewett C)					
12:15 – Lunch					
	IC ENGINES II P. Witze, Sandia	REACTION KINETICS II L. Goss, Innovative Science Solutions Inc.	FUNDAMENTAL COMBUSTION STUDIES II T. Jayaweera, Cornell	SPRAYS & DROPLETS II V. Nayagam, NASA	SOLID /SYNTHESIS II R. Mitchell, Stanford U.
1:20	7 Signature Size Distributions For Diesel And Gasoline Engine Exhaust Particulate Matter <i>Harris, S. J. Maricq, M. M.</i>	20 On The Derivation Of Char Kinetic Rates From Experimental Measurements <i>Shaddix, C. R.</i>	33 Computational And Experimental Study Of Coflowing Partially Premixed Ethylene/Air Flames <i>Bennett, B.Y. Smooke, M.D. McEnally, C.S. Pfefferle, L.D. Colket, M.B.</i>	46 Heat Release Characteristics In A Liquid Fueled Combustor Aimed At Active Control Of Combustion Instability <i>Brankovic, A. Ryder Jr, R.C. Sturgess, G.J. Lubarsky, E. Zinn, B.T.</i>	59 Preparation And Characterization Of Energetic Al-Mg Mechanical Alloy Powders <i>Shoshin, Y. Mudryy, R. Dreizin, E.</i>
1:40	8 Isotopic Tracing Of Fuel Components In Particulate Matter From A Compression Ignition Engine Fueled With Ethanol-In-Diesel Blends <i>Buchholz, B. A. Cheng, A. S. Dibble, R. W.</i>	21 Effect Of Surface Area Variation On Heat Release Rates In Premixed Flames <i>Ferguson, D. Richards, G. A. Woodruff, S. Bernal, S.</i>	34 Computational And Experimental Study Of Ammonium Perchlorate Combustion In A Counterflow Geometry <i>Smooke, M. D. Yetter, R.A. Parr, T.P. Hanson-Parr, D. M.</i>	47 Control Of Droplet Combustion Via Acoustical Excitation <i>Ghenai, C. Lobbia, R Smith, O. I. Karagozian, A. R.</i>	60 Microwave Assisted Combustion Synthesis Of Advanced Ceramics In A Fluidized Bed <i>Jain, A. Brezinsky, K.</i>
2:00	9 Line Of Sight Extinction Measurements Of Oxygenated Fuel Blends And Diesel Fuel In A Heavy-Duty, Direct Injection Diesel Engine <i>Tree, D. R. Dec, J. E.</i>	22 Wide-Temperature Range Kinetics Of The O + CHF ₃ Reaction <i>Fernandez, A. Fontijn, A.</i>	35 Unsteady Extinction In Counterflow Diffusion Flames: Experiments And Numerical Simulation <i>Santoro, V. S. Smooke, M. D. Gomez, A.</i>	48 Capturing the Spatial Variation of Burning Droplets in a Turbulent Combustor Using the One Dimensional Turbulence Model <i>Schmidt, J. R. Wendt, J.O.L. Kerstein, A. R.</i>	61 Coal Devolatilization At Elevated Pressures <i>Niksa, S.</i>
2:20	10 The Effect Of Oxygenate-In-Diesel Blends And Fischer-Tropsch Diesel On Particulate Matter Emissions From A Compression-Ignition Engine <i>Cheng, A. S. (Ed) Damm, C. J. Sawyer, R. F. Dibble, R. W. Lucas, D. Koshland, C. P.</i>	23 On The Accuracy Of Heterogeneous Shock-Tube Measurements Involving Aerosols <i>Petersen, E. L.</i>	36 Investigation Of Partially-Premixed Cylindrical And Axial Opposed Jet Propane-Air Flames <i>Mosbacher, D. M. Wehrmeyer, J. A. Osborne, R. J. Cheng, Z. Pitz, R.W. Sung, C. J.</i>	49 Droplet-Interaction Effects On The Extinction Of Droplet Streams In Crossflow <i>Russo, S. Gomez, A.</i>	62 Combustion Of Levitated Al/Ni Particles <i>Shafirovich, E. Mukasyan, A. Varma, A. Legrand, B. Chauveau, C. Gököl, I.</i>
2:40	11 Characterization And Measurements Of Diesel Particle Emissions With A New Sampling Method <i>Lyyrinen, J. Jokiniemi, J. Backman, U. Lappi, M. Vesala, H.</i>	24 Reactions Of H And Cl Atoms With Chlorinated Hydrocarbons <i>Bryukov, M. G. Slagle, I. R. Knyazev, V. D.</i>	37 The Effects Of Buoyancy And Dilution On The Structure And Lift-Off Of Coflow Laminar Diffusion Flames <i>Walsh, K. T. Fielding, J. Smooke, M. D. Long, M. B.</i>	50 Influence Of A Cooled Wall On Droplet Stream Combustion <i>Wei, J. B. Shaw B. D. Dwyer H. A.</i>	63 Numerical Analysis Of Piloted Ignition Of Solid Materials <i>Zhou, Y. Y. Walther, D.C. Fernandez-Pello, A.C.</i>
3:00 – Break					

2nd JOINT MEETING OF THE U. S. SECTIONS OF THE COMBUSTION INSTITUTE

	IC ENGINES III	REACTION KINETICS III	FUNDAMENTAL COMBUSTION STUDIES III	SOOT I	METALS
	M. Musculus, Sandia	P. Westmorland, U. Mass.	E. Mularz, NASA	F. Dryer, Princeton	T. Gale, US DOE
3:30	12 Morphology, Microstructure And Dimensions Of Diesel Engine Particulates <i>Lee, K. O. Cole, R. Sekar, R. Zhu, J. Choi, M. Y.</i>	25 Rate Constants For Flame Chemiluminescence <i>Smith, G. P. Luque, J. Jeffries, J. B. Crosley, D. R.</i>	38 Experiments On Deposition Of Nano-Structured Alumina-Titania Coatings By Normal Detonation Waves <i>Semenov, S. Y. Cetegen, B. M.</i>	51 Measurements Of Soot Volume Fractions In A 7.1 cm Methane Pool Fire Using Planar Laser-Induced Incandescence <i>Xin, Y. Gore, J.</i>	64 Homogeneous Chemistry Of Hg In Utility Exhausts <i>Niksa, S. Helble, J.J. Fujiwara, N.</i>
3:50	13 Swirl-Spray Interactions In A Diesel Engine <i>McCracken, M Abraham, J.</i>	26 Formation Of CO In The Reaction Of O Atom With CH ₃ : Reaction Over A Barrier But Not Through A Saddle Point <i>Knyazev, V. D.</i>	39 Flame And Furnace Synthesis Of Single- And Multi-Walled Carbon Nanotubes Walled Carbon Nanotubes And Nanofibers <i>Vander Wal, R. L. Ticich, T. M.</i>	52 Transient Measurements Of Gas Species Concentrations And Soot Properties In Pool Fires <i>Murphy, J. J. Shaddix, C. R.</i>	65 Soluble And Insoluble Sodium Product Formation Rate During Scavenging By Clay Powder <i>Gale, T. K. Wendt, J. O. L.</i>
4:10	14 Effect Of Injector Hole Size, Number And Orientation On Diesel Engine Emissions <i>Song, L. Abraham, J.</i>	27 Kinetics And Chemistry From The Fast Pyrolysis Of Cellulose In A Laminar Entrained Flow Reactor <i>Brown, A. L. Daily, J. W. Dayton, D. C.</i>	40 Influence Of Ambient Pressure And Oxygen Concentration On Natural Convection Smolder <i>Bar-Ilan, A. Walther, D.C. Fernandez-Pello, A.C.</i>	53 Early Soot Oxidation In Hydrocarbon-Fueled Laminar Diffusion Flames At Atmospheric Pressure <i>El-Leathy, A.M. Xu, F. Faeth, G.M.</i>	66 The Impact Of Chlorine On Chromium Speciation In A Laminar Diffusion Flame <i>Guo, B. Kennedy, I. M.</i>
4:30	15 Effect Of Orifice Diameter On The Structure Of Diesel Spray <i>Pickett, R. M. Siebers, D. L.</i>	28 Very High Pressure Investigations Of Ethane And Propane Pyrolysis <i>Brezinsky, K. Tranter, R. Sivaramakrishnan, R. Srinivasan, N. K.</i>	41 A Critical Examination Of The Modified Thermo- Diffusive Theory Of Laminar Flame Propagation <i>King, M. K.</i>	54 Investigation Of The Transition From Non- Sooting Towards Sooting, Coflow Ethylene Diffusion Flames <i>Smooke, M. D. McEnally, C. S. Fielding, J. Long, M. B. Pfefferle, L. D. Hall, R. J. Colket, M. B.</i>	67 Carbon Dioxide Effects On Metals Vaporization During Coal Combustion <i>Swenson, S. R. Lighty, J. S. Sarofim, A. F.</i>
4:50	16 Multiple-Scale Aspects Of Spray Combustion Modeling In Diesel Engines <i>Delplanque, J-P. Lengsfeld, C. S.</i>	29 Studies Of Hydrocarbon Growth Pathways With Fuel-Doped Nonpremixed Flames <i>McEnally, C. S. Anderson, H. Pfefferle, L. D. Robinson, A. G. Zwier, T. S.</i>	42 Hydrogen Production In Ultrarich Filtration Combustion Of Methane And Hydrogen Sulfide <i>Bingue, J. P. Saveliev, A. V. Fridman, A. A. Kennedy, L. A.</i>	55 Initial Observations Of Soot Formation During Ethanol Droplet Combustion At Elevated Pressures <i>Urban, B. D. Ernst, L. F. Kroenlein, K. Kazakov, A. Dryer, F. L.</i>	68 Transition Probabilities In The B ¹ Σ-X ¹ Σ ⁺ And The B ¹ Σ ⁺ -A ¹ Π Electronic Systems Of MgO <i>Daily, J. W. Dreyer, C. Branch, M. C.</i>

5:20 – 6:40 - U. S. Combustion Program Forum Jewett B

7:00 Meeting Banquet

*Restaurant Peony
388 9th St., # 288
Oakland, CA*

2nd JOINT MEETING OF THE U. S. SECTIONS OF THE COMBUSTION INSTITUTE

27 March, 2001

27 March, 2001					
	Jewett – A IC ENGINES IV C. Midkiff, U. Alabama	Jewett – B THEORY & MODELING I C. Westbrook, LLNL	Jewett – C PRACTICAL COMBUSTION I T. Phuoc, US DOE	D - 208 SOOT II G. Faeth, U. Michigan	E - 210 IGNITION & DETONATION I E. Oran, NRL
8:00	69 An Approach To Modeling Ignition In Diesel Jets <i>Gopalakrishnan, V. Abraham, J. Magi, V.</i>	87 Kinetic Modeling Of Heptane Combustion <i>Babushok, V. Tsang, W.</i>	105 Minimization Of Carbon Loss In Coal Reburning <i>Zamansky, V. M. Lissianski, V. V. Maly, P. M.</i>	123 Aerosol Aggregation Kinetics And Its Implications To The Interpretation Of Soot Optical Measurements <i>Kazakov, A. Dryer, F. L.</i>	141 Experimental Investigation Of Detonation Wave Diffraction During The Ignition Of Pulsed Detonation Engines <i>Sinibaldi, J. O. Brophy, C. M. Li, C. Kailasanath, K.</i>
8:20	70 A Comparison Study Of Various Simplified Combustion Mechanisms To Predict Ignition In CFD- Based Simulation Of Compression Ignition Engines <i>Zabetta, E. C. Kilpinen, P.</i>	88 A Numerical And Analytical Study Of Combustion Oscillation In A Perfectly Stirred Reactor <i>Petrova, M. V. McGarry, M. T. Wang, H.</i>	106 High Efficiency Electric Power Production From Coal Combustion <i>Seery, D. J.</i>	124 Modeling And Simulation Of Particle Coagulation In High Reynolds Number Flows <i>Garrick, S. C. Lehtinen, K. Zachariah, M. R.</i>	142 Verification And Validation Of Pulsed Detonation Engine Computations <i>Kailasanath, K.</i>
8:40	71 Measurements Of Combustion Temperatures And Post- Combustion Gas Concentrations For Simulated Diesel Combustion Events <i>Labs, J. Parker, T.</i>	89 Modeling Ethylene Combustion From Low To High Pressure <i>Carrière, T.P. Westmoreland, P. R. Kazakov, A. Stein, Y.S. Dryer, F.L</i>	107 Enhancing The Operation Of A Pulsed Combustor With Trajectory-Correction Control. <i>Edwards, D. Nguyen, K. Daw, C. S.</i>	125 Correlation Of Aerodynamic And Geometric Particle Size Properties Of Soot Generated By An Acetylene Diffusion Flame <i>Palacios, C. Martin, K. Ezekoye, O.</i>	143 Diode-Laser Sensors For Pulse Detonation Engines <i>Sanders, S. T. Mattison, D. W. Muruganandam, T. M. Hanson, R. K.</i>
9:00	72 (258) A Sequential Fluid- Mechanic Chemical-Kinetic Model Of Propane HCCI Combustion <i>Aceves, S.M., F lowers, D.L., Martinez-Frias, J., Smith, J. R., Westbrook, C., Pitz, W., Dibble, R., Wright, J. F., Akinyemi, W. C., Hessel, R. P.</i>	90 Evaluation Of GRI-MECH V. 3.0 For Predicting NO And OH Concentrations In Laminar, Premixed, C ₂ H ₆ /O ₂ /N ₂ Flames <i>Jordan, K. B. Reisel, J. R.</i>	108 Investigation Of Active Control Of Combustion Instability <i>Sheldon, M. Menon, S. Schadow, K. C. Wilson, K. J. Kiel, B. V.</i>	126 Soot Particle-Sizing In Flames Using A Two-Angle Scattering Technique <i>Koylu, U. O. Sapmaz, H. S.</i>	144 Ignition Of Explosive Atmospheres By Pulsed Infrared Radiation <i>Schenk, S. Bothe, H. Cammenga, H. K.</i>
9:20	73 Characterizing Lean Spark Ignition Combustion Instability In Terms Of A Low-Order Map <i>Wagner, R. M. Daw, C.S. Green Jr, J. B.</i>	91 Thermodynamic Functions For The Cyclopentadienyl Radical: The Effect Of Jahn- Teller Distortion <i>Kiefer, J. H. Tranter, R. S. Wang, H. Wagner, W. F.</i>	109 Optimization Of Premixed Low-Swirl Burner For Industrial Applications <i>Fable, S. E. Cheng, R. K.</i>	127 Observation Of Metastable Polymeric Species (> 1000 Da) And Fullerenes In Precursor Soot <i>Reilly, P. T. A. Rodgers, R. P. Whitten, W. B. Ramsey, J. M.</i>	145 Two-Step Chemical-Kinetic Descriptions For Detonations <i>Varatharajan, B. Williams, F. A.</i>
9:40	74 Development Of Advanced Combustion Models For Diesel Engines Using Large Eddy Simulation <i>Rao, S. Pomraning, E. Ruitland, C. J.</i>	92 Initial Processes In The Thermal Decomposition Of Ethanol <i>Tsang, W.</i>	110 Combustion Of Hydrogen- Enriched Methane In A Lean Premixed Swirl Burner <i>Schefer, R.W. Wicksall, D. M. Agrawal, A. K.</i>	128 LES Method For Non- Premixed Flames Including Soot Formation And Radiative Heat Transfer <i>Kollmann, W. Kennedy, I. M.</i>	146 Temperature Cross-Over And Non-Thermal Runaway At Two-Stage Ignition Of n- Heptane <i>Peters, N. Paczko, G. Seiser, R. Seshadri, K.</i>

2nd JOINT MEETING OF THE U. S. SECTIONS OF THE COMBUSTION INSTITUTE

10:00 – Break

	IC ENGINES V G. Feichner, Sandia	THEORY & MODELING II C. Vagelopoulos, Caltech	PRACTICAL COMBUSTION II T. Rawlins, Physical Sciences	MICROGRAVITY COMBUSTION D. Stocker, NASA	IGNITION AND DETONATION II M.Lavid, Energia
10:30	75 Analysis Of Combustion Chamber Deposit Formation In Small, Air-Cooled, Utility Engines <i>Caceres, D. Reisel, J. R. Sklyarov, A.</i>	93 Edge-Flame Instabilities At Large Lewis Numbers <i>Buckmaster, J.</i>	111 Combustion And Power Generation In Microscale Excess Enthalpy Burners <i>Sitzki, L. Borer, K. Wussow, S. Schuster, E. Maruta, K. Romney, P. D. Cohen, A.</i>	129 Studies On Flame Extinction By Inert Particles In Normal- And Micro-Gravity <i>Andac, M. G. Egolfopoulos, F. N. Campbell, C. C.</i>	147 Modeling Of Ignition And Combustion In A Partially Premixed Coal Gas Flame <i>Kok, J. B. W. Van Berkel, A. Louis, J. J. J.</i>
10:50	76 The Formation Of A Combustible Mixture During The First Cycle Of Cranking And Startup In A Port Fuel Injected Spark Ignition Engine <i>Cowart, J.S.</i>	94 A Boundary-Layer Combustion Model For Coupling With Large Eddy Simulations <i>Rouson, D. Baum, H. Quintere, J.</i>	112 Experimental Results For A Novel, High Swirl, Ultra Compact Combustor For Gas Turbine Engines <i>Anthenien, R. A. Mantz, R. A. Roquemore, W. M. Sturgess, G.</i>	130 Numerical Simulation of the Combustion of Spherical Magnesium Particles in Microgravity <i>Modak, A. Abbud-Madrid, A. Branch, M. C. Daily, J. W.</i>	148 A Detailed Numerical Study On The Ignition Of Strained Flames By Inert Particles <i>Andac, M. G. Egolfopoulos, F. N. Campbell, C. S.</i>
11:10	77 Modeling Catalytic Ignition Timing Of Ethanol-Water Fuel In Internal Combustion Engines <i>Clarke, E. Cordon, D. Jones, H. Kramer, S. Kranov, Y. Wang, X. Steciak, J. McIlroy, D. Beyerlein, S. Cherry, M.</i>	95 Stochastic Simulation Of Transport And Chemical Kinetics In Turbulent CO/H ₂ /N ₂ Flames <i>Hewson, J. C. Kerstein, A. R.</i>	113 Preliminary Experimental Results For Particulate Reducing Additives for use in Gas Turbine Engines <i>Mantz, R. A. Anthenien, R. A.</i>	131 Enclosure Effects On Microgravity Combustion Experiments <i>Baum, H. R. Kashiwagi, T.</i>	149 Experimental And Numerical Studies Of Extinction And Autoignition Of C ₃ H ₈ , C ₃ H ₆ , C ₂ H ₆ , And C ₂ H ₄ <i>Seiser, R. Seshadri, K. Pitz, W. J.</i>
11:30	78 Cycle To Cycle Variation Effects On Burning Rate Estimates Of SI Engine Flames Based On Flamelet Orientation Measurements <i>Knaus, D. A. Gouldin, F. C.</i>	96 Effect Of Scalar Dissipation Rate Fluctuations In Presumed PDF Methods Of Turbulent Nonpremixed Combustion <i>Cha, C.</i>	114 Chemiluminescent Visualization Of Spatially-Resolved Nitric Oxide Production Rates In Industrial Burners <i>Annen, K. D. Stickler, D. B. Brown, R. C. De Pijper, A. Pickens, A.</i>	132 Simulations Of The Interaction Of A Vortex With A Curved Flame In Microgravity <i>Patnaik, G. Kailasanath, K.</i>	150 Ignition Front Structure In A Methane-Air Jet <i>Ray, J. Najm, H. H. Mccoy, R. B.</i>
11:50	79 Study Of A Homogenous Charge Compression Ignition (HCCI) Process Using Genetic Algorithms. <i>Kolbu, J. Chen, J.-Y. Dibble, R. Warnatz, J.</i>	97 Combustion In A Transonic Flow With Large Axial And Transverse Pressure Gradients <i>Cai, J. Icoz, O. Liu, F. Sirignano, W. A.</i>	115 Simulation Of Combustion, Radiation Heat Transfer, And Glass-Melt Flow In A Glass Furnace <i>Chang, S. L.. Golchert, B. Petrick, M. Zhou, C. Q.</i>	133 The Structure And Stability Of Methane-Air Partially Premixed Flames Under Normal-And Zero-Gravity Conditions <i>Aggarwal, S. K. Puri, I. K. Shu, Z.</i>	151 Effects Of Boundary Layers On Shock-Flame Interactions And DDT <i>Oran, E. S. Gamezo, V. N. Khokhlov, A. M.</i>
12:10 – Lunch					

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	DIAGNOSTICS I A. Brown, U. Colorado	THEORY & MODELING III A. Fontijn, RPI	TURBULENT COMBUSTION I S. Pope, Cornell	LAMINAR FLAMES B. Cetegan, U. Conn.	FIRE J. Torero, U. Maryland
1:10	80 Semi-Quantitative Measurements Of CH Concentration At Atmospheric Pressure <i>Renfro, M. W. Chaturvedy, A. Laurendeau, N. M.</i>	98 Kinetics Of Intramolecular Hydrogen Transfer In Alkyl Radicals From Ab Initio Calculations <i>Allison, T.C. Tsang, W.</i>	116 An Investigation Of The Influence Of Oxygen Index On Soot, Radiation, And Emissions Characteristics Of Turbulent Jet Flames <i>Wang, L. Endrud, N. E. Turns, S. R. Agostini, M. D. D. Slavejkov, A. G.</i>	134 Direct Numerical Simulation Of Stagnation-Flow Premixed Flames: The Phenomenon Of Transition From Planar To Bunsen Flames <i>Cuenot, B. Poinsot, T. Egolfopoulos, F. N.</i>	152 Evaluation Of A Realistic Mass Transfer Number From Images Of An Upward Spreading Flame <i>Legros, G. Blase, K. Torero, J. L. Joulain, P.</i>
1:30	81 Use Of CH Fluorescence To Identify The Reaction Zones In Premixed And Nonpremixed Hydrocarbon-Air Flames <i>Sutton, J. A. Driscoll, J. F.</i>	99 Reaction Of Phenyl Radical With O ₂ Thermodynamic Properties, Important Reaction Paths And Kinetics <i>Bozzelli, J. Sebbar, N. Henning, B. Pitz, W.</i>	117 Stabilization Of A Lifted Turbulent Jet Flame Studied Using Cinema-PIV At 8000 Frames/Second <i>Upatnieks, A. Driscoll, J. F. Ceccio, S. L.</i>	135 Laminar Flame Propagation Through A Step-Stratified Charge <i>Ra, Y. Cheng, W. K.</i>	153 Turbulence Statistics In A Fire Room Model By Large Eddy Simulation <i>Zhang, W. Hamer, A. Klassen, M. Carpenter, D. Roby, R. J.</i>
1:50	82 An In-Situ Monitoring Technique For Control And Diagnostics Of Natural Gas Combustion Systems <i>Thornton, J. Richards, G. A. Nutter, Jr. R. S. Robey, E.</i>	100 Thermochemical Parameters, Reaction Paths And A Detailed Kinetic Model For The C ₂ H ₅ + O ₂ Reaction System <i>Shenga, C. Bozzelli, J. W. Dean, A. M.</i>	118 An Initial Study Of A Freely Propagating Turbulent Triple-Flame. <i>Greenhalgh, D. A. Stuckle, C. Lockett, R. D. Sherwood, G.</i>	136 Rapid Recording Of Flame Propagation And Extinction Of Methane-Air, And Selected C ₂ And C ₃ Hydrocarbon-Air Mixtures <i>Vagelopoulos, C. M. Dimotakis, P. E.</i>	154 A Comparison Of Extinction Limits And Spreading Rates In Opposed And Concurrent Spreading Flames Over Thin Solids <i>Kumar, A. Shih, H. T'ien, J. S.</i>
2:10	83 Temperature Field Measurements Of Small Nonpremixed Flames Using Abel Inversion Of Holographic Interferograms <i>Posner, J. D. Dunn-Rankin, D.</i>	A Theoretical Analysis Of The Reaction Between Propargyl And Molecular Oxygen <i>Hahn, D. K. Klippenstein, S. J. Miller, J.A..</i>	119 Characteristics Of Confined Diffusion Flames Stabilized Over Porous Plates In A Flow Channel <i>Nasir, S. Agrawal, A. K. Mcgregor, I. Tuchinskiy, L.</i>	137 Non-Buoyant Ethylene/Air Spherical Diffusion Flames In Concentric DC Electric Field <i>Yuan, Z-G. Hegde, U. Faeth, G. M.</i>	155 The Early Stages Of The Development Of Wall Fires <i>Tsai, K-C. Drysedale, D.</i>
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3:30 – 6:00 Poster Session and Reception

Convention Center East Hall

Poster paper titles are listed after the podium presentations.

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28 March, 2001

8:00

Plenary Session II
Jewett Ball Room

The Next Generation Of Combustion Research

Session Chair: *Derek Dunn-Rankin*
UC Irvine

Invited Talk 159
Advances and Needs in Flame Research
Chung K. Law
Princeton University

Invited Talk 160
Next-Generation Combustion Research for Automotive Transportation
David L. Reuss
General Motors R & D Center

Invited Talk 161
The Master Equation in Combustion Chemistry
James A. Miller
Sandia National Laboratories

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